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*Pat. No. 5712479, ****5,712,479**◆ GET 1st DRAWING SHEET OF 10

Jan. 27, 1998

Spatial-velocity correlation focusing in time-of-flight mass spectrometry

REISSUE: Reissue Application filed Jun. 1, 1999 (O.G. Jul. 13, 1999) Ex. Gp.: 2878; Re. S.N. 09/324,098**INVENTOR:** Reilly, James P., Bloomington, Indiana
Colby, Steven M., Bloomington, Indiana
King, Timothy B., Bloomington, Indiana**ASSIGNEE-AT-ISSUE:** Indiana University Foundation, Bloomington, Indiana (02)**APPL-NO:** 566,140**FILED:** Dec. 1, 1995**REL-US-DATA:**

Continuation of Ser. No. 327,618, Oct. 24, 1994 now patented 5,504,326 Apr. 2, 1996

INT-CL: [6] H01J 49#40**US-CL:** 250#282; 250#287**CL:** 250**SEARCH-FLD:** 250#287, 282, 281, 286**REF-CITED:****U.S. PATENT DOCUMENTS**

2,685,035	7/1954	*	Wiley	250#287
4,694,167	9/1987	*	Payne et al.	250#287
5,160,840	11/1992	*	Vestal	250#287
5,504,326	4/1996	*	Reilly et al.	250#287
5,510,613	4/1996	*	Reilly et al.	250#287

PRIM-EXMR: Nguyen, Kiet T.**LEGAL-REP:** Woodard, Emhardt, Naughton, Moriarty & McNett**CORE TERMS:** region, velocity, sample, equation, detector, voltage, grid, ion, time-of-flight, electric field, flight, parameter, focusing, peak, spread, laser, accelerating, width, correlation, spatial-velocity, spectrometer, algorithm, geometry, variable, spatial, acceleration, drift, ratio, experimental, electric**ABST:**

An apparatus and method for minimizing ion peak width measurements in a time-of-flight mass

Source: All Sources : Area of Law - By Topic : Patent Law : Patents : U.S. Patents : Utility Patents Terms: **patno is 5504326** ([Edit Search](#))

*Pat. No. 5,504,326, ****5,504,326**◆ GET 1st DRAWING SHEET OF 10

Apr. 2, 1996

Spatial-velocity correlation focusing in time-of-flight mass spectrometry

INVENTOR: Reilly, James P., Bloomington, Indiana
Colby, Steven M., Bloomington, Indiana
King, Timothy B., Bloomington, Indiana**ASSIGNEE-AT-ISSUE:** Indiana University Foundation, Bloomington, Indiana (02)**ASSIGNEE-AFTER-ISSUE:** Date Transaction Recorded: Dec. 22, 1997
ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).
ADVANCED RESEARCH & TECHNOLOGY INSTITUTE 501 NORTH MORTON STREET, SUITE 111
BLOOMINGTON, INDIANA 47404
Reel & Frame Number: 8861/0293**APPL-NO:** 327,618**FILED:** Oct. 24, 1994**CERTCORR:** Dec. 24, 1996 a Certificate of Correction was issued for this patent**INT-CL:** [6] H01J 49#40**US-CL:** 250#282; 250#287**CL:** 250**SEARCH-FLD:** 250#282, 287, 281, 282, 286**REF-CITED:****U. S. PATENT DOCUMENTS**

2,685,035	7/1954	* Wiley	
<u>4,694,167</u>	9/1987	* Payne et al.	250#287
<u>5,160,840</u>	11/1992	* Vestal	250#282

OTHER PUBLICATIONS

"Pulsed Ion Extraction Combined With High Accelerating Potentials For Matrix-Assisted Laser Desorption Time-of-Flight Mass Spectrometry", John J. Lennon and Robert S. Brown, from the 42nd ASMS Conference on Mass Spectrometry in Chicago, Illinois, Jun., 1994.

B. Spengler, et al., "Ultraviolet Laser Desorption/Ionization Mass Spectrometry of Proteins above 100000 Daltons by Pulsed Ion Extraction Time-of-Flight Analysis", Anal. Chem., vol. 62, No. 8, Apr. 1990, pp. 793-796.

V. I. Karataev, et al., "New Method for Focusing Ion Bunches in Time of Flight Mass Spectrometers", Sov. Phys. Tech. Phys., vol. 16, No. 7, Jan. 1972, pp. 1177-1179.

B. A. Mamyrin, et al., "The mass-reflectron, a new nonmagnetic time of flight mass spectrometer

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1/39/1

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12964583

Basic Patent (No,Kind,Date): US 5504326 A 960402 <No. of Patents: 004>

Patent Family:

Patent No	Kind	Date	Applic No	Kind	Date	
US 5504326	A	960402	US 327618	A	941024	(BASIC)
US 5510613	A	960423	US 477198	A	950607	
US 5712479	A	980127	US 566140	A	951201	
WO 9613052	A1	960502	WO 95US13650	A	951024	

Priority Data (No,Kind,Date):

US 327618 A 941024
US 477198 A 950607
US 327618 A3 941024
US 566140 A 951201
US 327618 A1 941024

PATENT FAMILY:

UNITED STATES OF AMERICA (US)

Patent (No,Kind,Date): US 5504326 A 960402

SPATIAL-VELOCITY CORRELATION FOCUSING IN TIME-OF-FLIGHT MASS
SPECTROMETRY (English)

Patent Assignee: INDIANA UNIVERSITY FOUNDATION (US)

Author (Inventor): REILLY JAMES P (US); COLBY STEVEN M (US); KING
TIMOTHY B (US)

Priority (No,Kind,Date): US 327618 A 941024

Applic (No,Kind,Date): US 327618 A 941024

National Class: * 250282000; 250287000

IPC: * H01J-049/40

CA Abstract No: * 124(26)355755Q; 124(26)355755Q

Derwent WPI Acc No: * G 96-187815; G 96-221358; G 98-120071; G
96-187815

Language of Document: English

Patent (No,Kind,Date): US 5510613 A 960423

SPATIAL-VELOCITY CORRELATION FOCUSING IN TIME-OF-FLIGHT MASS
SPECTROMETRY (English)

Patent Assignee: INDIANA UNIVERSITY FOUNDATION (US)

Author (Inventor): REILLY JAMES P (US); COLBY STEVEN M (US); KING
TIMOTHY B (US)

Priority (No,Kind,Date): US 477198 A 950607; US 327618 A3 941024

Applic (No,Kind,Date): US 477198 A 950607

National Class: * 250287000; 250281000

IPC: * H01J-049/40

CA Abstract No: * 124(26)355755Q

Derwent WPI Acc No: * G 96-187815; G 96-221358; G 98-120071; G
96-221358

Language of Document: English

Patent (No,Kind,Date): US 5712479 A 980127

SPATIAL-VELOCITY CORRELATION FOCUSING IN TIME-OF-FLIGHT MASS
SPECTROMETRY (English)

Patent Assignee: INDIANA UNIVERSITY FOUNDATION (US)

Author (Inventor): REILLY JAMES P (US); COLBY STEVEN M (US); KING
TIMOTHY B (US)

Priority (No,Kind,Date): US 566140 A 951201; US 327618 A1 941024

Applic (No,Kind,Date): US 566140 A 951201

Addnl Info: 5504326 960402 Patented

National Class: * 250282000; 250287000

IPC: * H01J-049/40

CA Abstract No: * 124(26)355755Q
Derwent WPI Acc No: * G 96-187815; G 96-221358; G 98-120071; G
98-120071
Language of Document: English

UNITED STATES OF AMERICA (US)

Legal Status (No,Type,Date,Code,Text):

US 5504326	P	941024	US AE	APPLICATION DATA (PATENT)
				(APPL. DATA (PATENT))
			US 327618 A	941024
US 5504326	P	941024	US AS02	ASSIGNMENT OF ASSIGNOR'S
				INTEREST
				INDIANA UNIVERSITY FOUNDATION SHOWALTER HOUSE
				P.O. BOX 500 BLOOMINGTON, INDIANA ; REILLY,
				JAMES P. : 19941024; COLBY, STEVEN M. :
				19941024; KING, TIMOTHY B. : 19941024
US 5504326	P	960402	US A	PATENT
US 5504326	P	961224	US CC	CERTIFICATE OF CORRECTION
US 5510613	P	941024	US AA	PRIORITY
			US 327618 A3	941024
US 5510613	P	950607	US AE	APPLICATION DATA (PATENT)
				(APPL. DATA (PATENT))
			US 477198 A	950607
US 5510613	P	960423	US A	PATENT
US 5510613	P	961022	US CC	CERTIFICATE OF CORRECTION
US 5712479	P	941024	US AA	PRIORITY
			US 327618 A1	941024
US 5712479	P	951201	US AE	APPLICATION DATA (PATENT)
				(APPL. DATA (PATENT))
			US 566140 A	951201
US 5712479	P	980127	US A	PATENT
US 5712479	P	990713	US RF	REISSUE APPLICATION FILED
				(REISSUE APPL. FILED)
				19990601

WORLD INTELLECTUAL PROPERTY ORGANIZATION, PCT (WO)

Patent (No,Kind,Date): WO 9613052 A1 960502
SPATIAL-VELOCITY CORRELATION FOCUSING IN TIME-OF-FLIGHT MASS
SPECTROMETRY (English)
Patent Assignee: INDIANA UNIVERSITY FOUNDATION (US)
Author (Inventor): REILLY JAMES P; COLBY STEVEN M; KING TIMOTHY B
Priority (No,Kind,Date): US 327618 A 941024
Applic (No,Kind,Date): WO 95US13650 A 951024
Designated States: (National) CA; JP (Regional) AT; BE; CH; DE; DK;
ES; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE
Filing Details: WO 100000 With international search report
IPC: * H01J-049/40
CA Abstract No: * 124(26)355755Q
Derwent WPI Acc No: * G 96-187815; G 96-221358; G 98-120071
Language of Document: English

WORLD INTELLECTUAL PROPERTY ORGANIZATION, PCT (WO)

Legal Status (No,Type,Date,Code,Text):

WO 9613052	P	941024	WO AA	PRIORITY (PATENT)
			US 327618 A	941024
WO 9613052	P	951024	WO AE	APPLICATION DATA (APPL. DATA)
			WO 95US13650 A	951024
WO 9613052	P	960502	WO AK	DESIGNATED STATES CITED IN A
				PUBLISHED APPLICATION WITH SEARCH REPORT


			(DESIGNATED STATES CITED IN A PUBLISHED APPL. WITH SEARCH REPORT)
			CA JP
WO 9613052	P	960502	WO AL DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A PUBLISHED APPLICATION WITH SEARCH REPORT (DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A PUBLISHED APPL. WITH SEARCH REPORT) AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
WO 9613052	P	960502	WO A1 PUBLICATION OF THE INTERNATIONAL APPLICATION WITH THE INTERNATIONAL SEARCH REPORT (PUB. OF THE INTERNATIONAL APPL. WITH THE INTERNATIONAL SEARCH REPORT)
WO 9613052	P	960704	WO DFPE REQUEST FOR PRELIMINARY EXAMINATION FILED PRIOR TO EXPIRATION OF 19TH MONTH FROM PRIORITY DATE
WO 9613052	P	960807	WO 121 EP: PCT APP. ART. 158 (1) (EP: PCT ANM. ART. 158 (1))
WO 9613052	P	980304	WO 122 EP: PCT APP. NOT ENT. EUROP. PHASE (EP: PCT ANM. NICHT IN EUROP. PHASE EING.)
WO 9613052	P	980624	WO NENP NON-ENTRY INTO THE NATIONAL PHASE IN: CA

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AP - US 566140/95 19951201 [1995US-0566140]

DT - US-P

ACT - 19951201 US/AE-A

APPLICATION DATA (PATENT)

{US 566140/95 19951201 [1995US-0566140]}

- 19980127 US/A

PATENT

- 19990713 US/RF

REISSUE APPLICATION FILED

19990601

UP - 1999-30

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PN - US 5504326 [US5504326]

AP - US 327618/94 19941024 [1994US-0327618]

DT - US-P

ACT - 19941024 US/AE-A

APPLICATION DATA (PATENT)

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- 19941024 US/AS02

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19941024; KING, TIMOTHY B. : 19941024

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PATENT

- 19961224 US/CC

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UP - 1999-19

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AN - 199928-001535

PN - 5712479 A [US5712479]

DT - A (UTILITY)

OG - 1999-07-13

CO - REA

ACT - REISSUE APPLICATION FILED

SH - REISSUE APPLICATION FILED

1/1 PAST - (C) PAST

AN - 199652-000110

PN - 5504326 A [US5504326]

DT - A (UTILITY)

OG - 1996-12-24

CO - COR

ACT - CERTIFICATE OF CORRECTION

SH - CERTIFICATE OF CORRECTION

1/1 CRXX - (C) CLAIMS/RRX

AN - 2935400

PN - 5,712,479 A 19980127 [US5712479]

PT - E (Electrical)

PA - Indiana University Foundation

ACT - 19990601 REISSUE REQUESTED

Issue Date of O.G.: 19990713

Reissue Request Number: 09/324098

Examination Group responsible for Reissue process: 2878

UP - 1999-27

UACT- 1999-07-13

1/1 CRXX - (C) CLAIMS/RRX

AN - 2704412

PN - 5,504,326 A 19960402 [US5504326]

PT - E (Electrical)

PA - Indiana University Foundation

ACT - 19971222 REASSIGNED

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Assignor: INDIANA UNIVERSITY FOUNDATION DATE SIGNED: 06/30/1997

Assignee: ADVANCED RESEARCH & TECHNOLOGY INSTITUTE 501 NORTH MORTON STREET, SUITE 111 BLOOMINGTON, INDIANA 47404

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Contact: LOCKE REYNOLDS BOYD & WEISELL A. JAMES RICHARDSON, ESQ. 1000 CAPITAL CENTER SOUTH 201 NORTH ILLINOIS ST. INDIANAPOLIS, IN 46204

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